

REMARKS

The claims have been listed reflecting the restriction cancellations made without traverse in the response of 2 June 2009. Claim 13 has been amended in order to overcome the objection under 35 USC 112, by replacing the wording “the sample providing part” by “a sample providing part”. Claim 39 has been deleted.

The present invention relates to the concept of providing a two part docking system, by means of which a flow-through-cell is created by docking the two parts together.

Kösslinger discloses a piezoelectric sensor arrangement for analysis of fluid samples, comprising a signal source a measuring device. The sensor arrangement of Kösslinger does not include a docking system in the sense of the present invention. Instead Kösslinger discloses the insertion of an already assembled flow through cell (18) (indicated as “first part” by the Examiner in the Office Action), see Fig. 5. This flow through cell (18) does not comprise an opening allowing said sensor element to contact a flow cell element as indicated in present claim 43. The lower casing part (20) (indicated as “second part” by the Examiner) indeed comprises fluid channels, but does not comprise a flow cell element, because the flow cell element of Kösslinger is the component part shown in Fig. 4, i.e. the flow-through cell (18), except the sensor element (29) and the wire bonding (28). The abutting surface (support rib) (12) of the flow cell element in Kösslinger is not elastic, and the flow through cell is formed by fixing the sensor element (29) to the abutting surface by means of adhesive, see column 8, lines 18-32. Therefore, the teaching of Kösslinger is entirely different from the solution as defined in claim 43.

The piezoelectric sensor arrangement of present claim 43 thus differs from the teaching of Kösslinger in that the first part of the docking system comprises means for receiving a sensor element, which allows free access to the electrode thereof, so that it can come into contact with a flow cell element, when the two parts of the docking system is docked against each other, and that the second part of the docking system comprises flow cell element, which has an elastic abutting surface, which is capable of forming a seal against the piezoelectric quartz crystal when the docking

system is closed, such that a flow cell is created by bringing the sensor element of the first part into contact with the flow cell element of the second part.

The sensor arrangement of Kösslinger requires fixing the sensor element into the flow cell by means of adhesive, which means that the flow cell has to be manufactured with high precision and that the surface coating of the electrode has to be performed before gluing the resonator to the flow cell, and the entire flow cell must be disposed of after use. Moreover there is a risk that the gluing may interact with the surface coating and disable the functionality of the surface coating.

The sensor arrangement of the present invention provides a way of forming a flow through cell which does not require fixing the sensor element into the flow cell by means of adhesive, thereby avoiding the drawbacks thereof. A person of ordinary skill in the art having knowledge of Kösslinger would not contemplate the separation of the sensor element (29) from the flow cell element shown in Fig 4, since this pre-assembled flow through cell is a prerequisite for the function of the Kösslinger arrangement. Moreover, the skilled person would not choose to select an elastic material for the abutting surface (support rib) (12) of the flow cell element in the Kösslinger arrangement, because this would not be of any advantage when gluing the sensor element to the flow cell element.

None of the cited documents reveal the idea of providing an arrangement by means of which a flow through cell can be created without the need of gluing the sensor element to the flow cell element. It is therefore submitted that the sensor arrangement of claim 43 is novel and nonobvious in view of Kösslinger alone or in view of any of the other cited references.

Claim 32 relates to a flow cell element intended for use in the piezoelectric sensor arrangement. Kösslinger discloses a flow cell element, see Fig. 4. However, this flow cell element does not include a recess surrounded by an abutting surface made of an elastic material which is capable of forming a seal against the piezoelectric quartz crystal (29). As discussed above the skilled person would not choose elastic material for the support rib (12), because the sensor element is to be glued thereon.

The lower casing part (20) includes an abutting surface (the bottom of the space (30)), having elastic sealings (27), but this abutting surface is not adapted to come into abutment with the piezoelectric quartz crystal (29), in order to form a flow through cell. On the contrary, it is intended to abut against the bottom of the flow cell element (instead of being the flow cell element) and the sealings are intended for sealing the liquid channels. Therefore, the bottom surface of the space (30) cannot be considered to correspond to the elastic abutting surface of the flow cell element of claim 32. It is therefore submitted that the flow cell element of claim 32 is novel and nonobvious in view of Kösslinger alone or in view of any of the other cited references.

As the subject matter of independent claims 43 and 32 has been shown to be novel and nonobvious over the cited prior art, this is also true for all dependent claims.

In the event there are any questions concerning this Amendment, these remarks, or the application in general, the Examiner is respectfully urged to telephone the undersigned so that prosecution of the application may be expedited.

Respectfully Submitted,

11 November 2009

/Timothy Platt/
Timothy Platt Reg. No. 43,003

ALBIHNS STOCKHOLM AB
Box 5581
SE-114 85 Stockholm, Sweden
tel +46 (0) 8 5988 7247
fax +46 (0) 8 5988 7300
Customer No. 26288